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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/009,324	03/21/2002	Ian David Lewis	367.40909X00	6967
20457	7590	09/07/2005	EXAMINER	
ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-3873			SHANKAR, VIJAY	
			ART UNIT	PAPER NUMBER
			2673	

DATE MAILED: 09/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/009,324

Applicant(s)

LEWIS, IAN DAVID

Examiner

VIJAY SHANKAR

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 June 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8, 11-19 and 28-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 11-19 and 28-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-8, 11-19, and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Usui et al (5,347,294) in view of Ito et al (5,748,179).

Regarding Claim 1, Usui et al teaches a display device comprising: a liquid crystal display (LCD) comprising first and second liquid crystal cells positioned along a first axis of the display device (Col.2, line 2-13); a first display driver (23 in fig.8) for driving the first liquid crystal cell in a first direction and in a second direction (Fig.8, Column 8, line 42- col.10, line 40; Figs.12,15; Col.15, line 20- col.16, line 50); a second display driver (24 in fig.8) for driving the second liquid crystal cell in a first direction and in a second direction (Fig.8, Column 8, line 42- col.10, line 40; Figs.12,15; Col.15, line 20-

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col.16, line 50); and means for synchronizing the first and second display drivers (Fig.8, Col.8, line 55- col.9, line 17); and wherein the first and second display drivers are positioned at opposed sides of the LCD. ( Fig.8; Col.8, line 42-54; Figs.12,15; Col.15, line 20- col.16, line 50 ). However, Usui et al does not recite or disclose a display device comprising the same liquid crystal cell in a first direction and in a second direction.

Ito et al teaches the LCD display device comprising the same liquid crystal cell in a first direction and in a second direction (Fig.21; Column 14, line 47- Column 16, line 65).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teaching of Ito et al into Usui et al for providing the display device where the same cell is refreshed in both directions.

Regarding Claim 2, Usui et al teaches a display device wherein the first and second display drivers are positioned at opposed sides of the LCD along the first axis of the display device. (Fig.8; Col.8, line 42-54 ).

Regarding Claims 3-4, Usui et al teaches a display device wherein the first axis extends in the direction of the height of the LCD; and the

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first axis extends in the direction of the width of the LCD. (Col.1, line 25- col.2, line 16 ).

Regarding Claims 5-8, Usui et al teaches a display device wherein the LCD is substantially symmetrical about a bisector; the bisector is the first axis; and the bisector is a second axis perpendicular to the first (Fig.3; Col.4, line 31- col.5, line 31).

Regarding Claim 11, Usui et al teaches a display arrangement wherein the intermediate element interconnects the first and second drivers for synchronization. ( Fig.8, Col.8, line 55- col.9, line 17).

Regarding Claims 12 ,13, Usui et al teaches a display arrangement wherein the intermediate element is flexible and a flexible printed circuit (FPC) foil. (Figs. 3,8; Col.4, lines 31-58).

Regarding Claim 14, Usui et al teaches a display arrangement wherein the intermediate display element comprises display device power control circuitry which is same as voltage selector (92 and 93 in fig.8). ( Fig.8; Col.9, lines 1-17).

Regarding Claim 15, Usui et al teaches a display arrangement wherein the display device further comprises first and second flexible driver supports for supporting the respective first and second drivers (Figs. 3,8; Col.4, lines 31-58; Col.8, line 42-54).

Regarding Claims 16-17, Usui et al teaches a display arrangement wherein the flexible driver supports flex to contact the LCD and the intermediate element; and the flexible driver supports are FPC foils. (Figs. 3,8; Col.4, lines 31-58; Col.8, line 42-54).

Regarding Claims 18-19, Usui et al teaches a display module and a portable device comprising a display device. (Figs. 1,3,8; Col.3, lines 25-32).

Regarding Claim 28, Usui et al teaches a display device comprising: a liquid crystal display (LCD) comprising first and second liquid crystal cells positioned along a first axis of the display device (Col.2, line 2-13); a first display driver (23 in fig.8) for driving the first liquid crystal cell in a first direction and in a second direction (Fig.8, Column 8, line 42- col.10, line 40; Figs.12,15; Col.15, line 20- col.16, line 50); a second display driver (24 in fig.8) for driving the second liquid crystal cell in a first direction and in a second direction (Fig.8, Column 8, line 42- col.10, line 40; Figs.12,15; Col.15, line 20-

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col.16, line 50); and means for synchronizing the first and second display drivers (Fig.8, Col.8, line 55- col.9, line 17); a connector for connecting display device circuitry to an external element (51 in fig.8), and an intermediate element (23 and 24 in fig.8) for interfacing the display device and the connector (Fig.8; Col.8, line 42- col.9, line 65); wherein the first and second display drivers are positioned at opposed sides of the LCD and the intermediate element is located substantially behind the LCD. ( Fig.8; Col.8, line 42- col.9, line 65; Figs.12,15; Col.15, line 20- col.16, line 50 ). However, Usui et al does not recite or disclose a display device comprising the same liquid crystal cell in a first direction and in a second direction.

Ito et al teaches the LCD display device comprising the same liquid crystal cell in a first direction and in a second direction (Fig.21; Column 14, line 47- Column 16, line 65).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teaching of Ito et al into Usui et al for providing the display device where the same cell is refreshed in both directions.

Regarding Claims 29-30, Ito et al teaches a display device Wherein the first direction is substantially perpendicular to the second direction (fig.21).

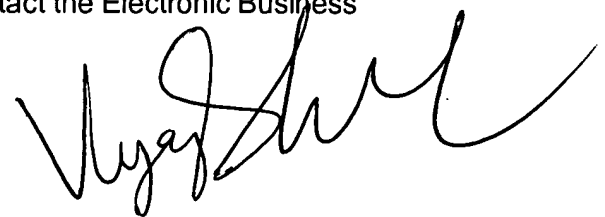
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2. Applicant's arguments with respect to Claims 1-8, 11-19, and 28-30 have been considered but are moot in view of the new ground(s) of rejection.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VIJAY SHANKAR whose telephone number is (571) 272-7682. The examiner can normally be reached on M-F 7:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BIPIN SHALWALA can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



VIJAY SHANKAR  
Primary Examiner  
Art Unit 2673

VS